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Naturalist Notebook

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APRIL 1973 VOLUME 9 NUMBER 4

PUBLISHED BY THE THAMES SCIENCE CENTER

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Cover:
Dolphin Delight ..... An original woodcut by Ann Morgan

Printed on recycled paper

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Editor: Brenda Golberg Bibb
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The *Naturalist Notebook* is published 10 times annually. Subscription available through membership only. The Thames Science Center is a nonprofit organization seeking a quality environment through education. The active support of children and adults in the Science Center, its programs, activities and efforts is earnestly solicited.

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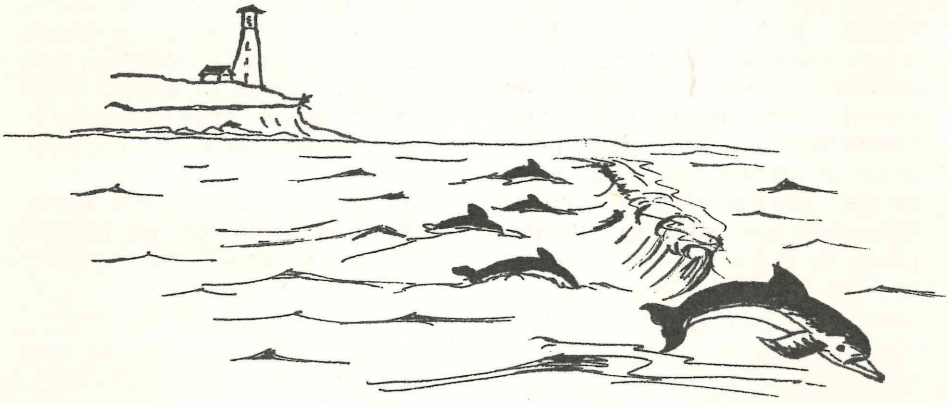
Animal Sounds In The Sea

by Paul F. Smith



Illustrations by Jean Ryan

Jacques-Yves Cousteau entitled one of his books about the sea *The Silent World,* thereby perpetuating the myth that there is no sound beneath the surface of the ocean. This notion is understandable perhaps, because if, on a very calm day, you should submerge your head in the ocean or a lake, you will hear very little indeed. But this is because the human ear—which is very sensitive to the slightest sound in air is relatively insensitive to sound underwater. The reason you hear very little underwater is not because there is no sound to be heard, but because underwater you are functionally deaf. Nevertheless, if you listen very carefully, you may hear noises such as the sounds of motor boats if there are any in the area, the surf, and even the shouting of children playing in the water near you. So, you can prove to yourself that there is sound underwater.

Fishermen have suspected for years that fish could hear. Isaac Walton, who wrote the "Complete Angler" in 1653, argued that fish could hear very well indeed and said "it shall be a rule for me to make as little noise as I can when I am fishing,' and he advised anglers to "forbear swearing, lest they be heard and catch no fish." He also told of tamed carp coming to be fed by the ringing of a bell or the beating of a drum. There are other instances cited from time to time in ancient literature of fish being frightened away by the firing of guns or other loud

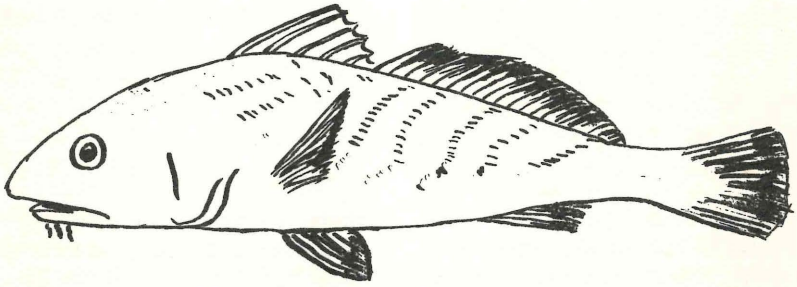
noises.

Some fishermen use sound to attract fish into nets. Indonesian fishermen use a bamboo frame with coconut shells strung on it, which they shake under water. They believe the sound attracts certain kinds of fish to the boat. Some fishermen in the Madeira Islands used to chop bait in their boats upon arrival at the fishing ground in the belief that the sound of the chopping attracted fish to the area. Singing has been used to attract fish also. Pliny in his "Natural History" told of fishermen who sang to call dolphins to scare fish into shallow water. He also cites other instances of dolphins being attracted by music and even coming when called. In modern times, attempts have been made to develop sonic fish lures with varying degrees of success.

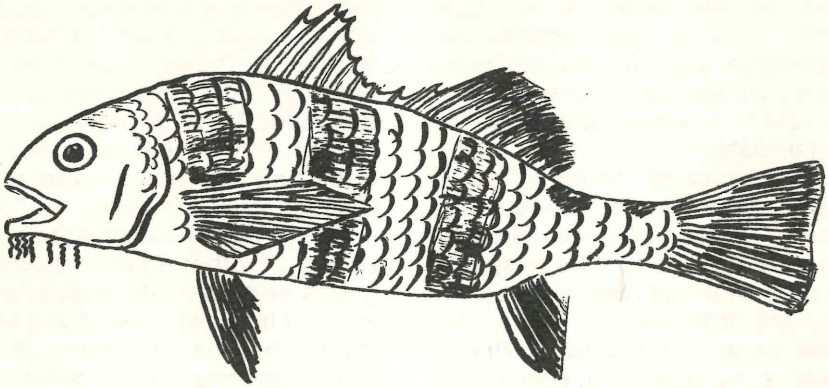
Well, if fish can hear, it certainly isn't likely that they have developed this sense simply to respond to man-made sounds. Indeed, since the time of Aristotle it has been known that fish themselves make a variety of sounds. In fact, some fish have acquired common names on the basis of the noises they make. William Penn wrote in 1685 of the drum fish which was so named because, when caught, it made a drumlike sound. And a fish called the croaker has been so called at least since the 18th Century because it "croaks." Whaling men during the days of sailing ships used to talk of heavy sounds produced by whales swimming near the ship.

In several parts of the world, fishermen listen for the sounds fish make either by listening through the hull of the boat, by thrusting the blade of an oar into the water and holding the end of the oar against the ear, or even by diving in the water and listening under water for the fish. Using such listening methods these fishermen seem to be able to locate fish and even tell what species of fish they have found.

In this century, and especially in the last thirty years, scientists in the field of marine bioacoustics



Croaker



Sea drum

have greatly expanded our knowledge of the sounds fish and other marine animals produce and to which they react. Indeed, of all of the complex underwater animals investigated, perhaps only the octopus neither "speaks" nor hears. But sound is so well transmitted by water that it would seem odd that most, if not all, aquatic creatures failed to make some use of sound. For example, a 6 pound charge of T.N.T. was exploded in the water off Dakar, West Africa and was picked up by underwater listening equipment in the Bahamas some 3000 miles away. By contrast, a similar charge exploded in air would only be detectable a few miles away.

Much more is known about the sounds aquatic animals make than what use, if any, is made of them. All animals make some sound just in the process of moving about, eating, etc., but it is difficult to know if these sounds have "meaning" either for the producer or the listener. For example, the snapping shrimp (so-called in part because it makes a snapping noise) is one of the noisest animals for its size in the ocean. The noise it makes seems to be simply a function of their snapping their claws together, but its not clear that the noise itself is of any importance to the shrimp. James Fish at the University of Rhode Island discovered that lobsters sometimes produce a short growling noise when grabbed by the carapace and the most aggressive lobsters are more likely to produce the sound indicating perhaps the sound is important in the defensive behavior of the animal. Yet, the fundamental pitch of this noise is somewhat higher than the pitch at which George Offutt, also of U.R.I., found these animals are most sensitive. Furthermore, these sounds are not intense enough to be easily detected by another lobster.

Determining what sounds are of biological significance and which are not is a great problem for marine bioacousticians. It's probable that all sounds produced by aquatic animals are important either to the animal producing them or to some other animal such as predator or prey. It does seem that some sounds

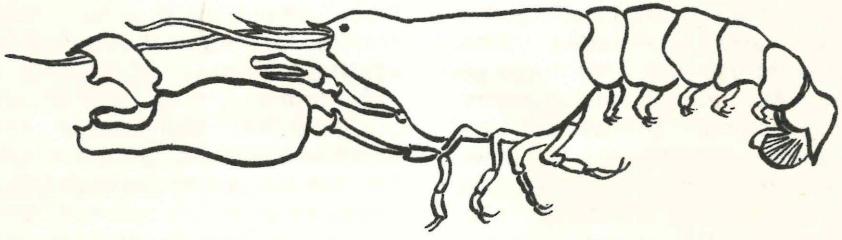
are accidental, such as noises made by fish scales when they swim, while others seem to be purposeful such as sounds produced by special organs such as the swim bladder apparatus of certain fish.

By observing animals carefully under controlled conditions, marine bioacousticians attempt to relate specific sounds to specific behaviors of the animals. It appears that some sounds are used to attract mating partners such as the boat whistle sound of the toad fish, which seems to be emitted only by males and which seems to attract females to nesting sites. Furthermore, this sound is made with increasing rapidity if another male toad fish approaches the nesting site. Thus, it also serves to establish and maintain different territories for the fish.

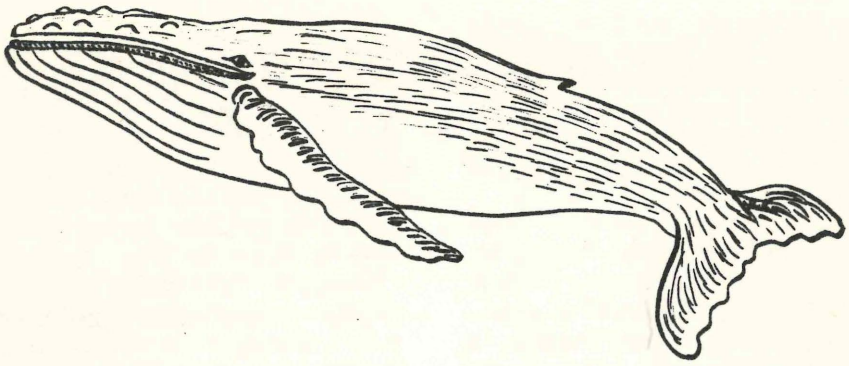
Perhaps the most fascinating sounds produced in the ocean are those made by whales. Many species of whales are known to use a kind of sonar system. They produce rapid and sometimes very complex series of very high pitched clicks and use the echoes returning from objects in the water to locate the object. Furthermore, it is believed that porpoises can even determine whether an object is food or not. Several early experiments are described by W. N. Kellogg in his book, "Porpoises and Sonar" published by the University of Chicago Press, in 1961.

These animals also produce a variety of other sounds such as grunts and whistles which appear to function as communication signals between members of the same species. The bottlenose porpoise is extremely vocal and has been taught by John Lilly to mimic human speech. These animals have been observed to emit both echo-ranging clicks and communicative whistles simultaneously which indicates that they can attend to two acoustic events at the same time.

Dr. Roger Payne of the Institute for Research in Animal Behavior of the New York Zoological Society and The Rockefeller University has studied whales extensively and has concluded that some whales, i.e., the humpbacks, sing much as birds do, but the songs of the humpback whale are exceedingly complex and last



Snapping shrimp

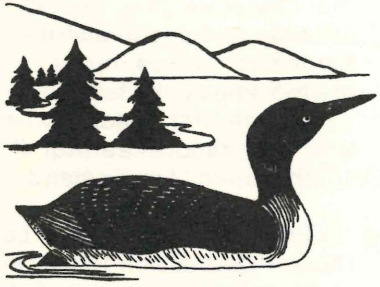


Humpback whale

for as long as a half hour or so. He has produced a beautiful recording, "Songs of the Humpback Whale" which is available by writing Whales, P.O. Box 131, Del Mar, California 92014. Proceeds from the sale of the record go to the New York Zoological Society Whale Fund.

Paul Smith is a research psychologist who became interested in animal sounds of the sea at a 1962-1963 Naval Personnel Seminar. He is currently doing research on underwater hearing by free-swimming divers at the Naval Submarine Medical Resarch Laboratory in Groton.

THAMES SCIENCE CENTER
MUSEUM SHOP



Golden Nature Guides
Field Guide to Birds
Field Guide to Trees
Short Walks in Connecticut

Mysterious Moodus Noises

Mysterious sounds: are the rumblings that issue from the large hill near Moodus, Connecticut, natural or supernatural? Local Indian legend ascribes the noises to conflicts between two sets of witches in a cavern presided over by an evil sorcerer. Arguments between the witches, who practiced conflicting forms of magic, would be settled by the sorcerer expelling the witches with a loud rumble and a blast of wind.

The mysterious Moodus noises may reveal their secrets because of an earthquake recording network now in operation at the Southeastern Branch of the University of Connecticut.

Dr. Edward Chiburis, associate professor of geophysics and assistant director of the Marine Sciences Institute who established the network, called (CONNET), believes the noises in Moodus are seismic in origin (meaning from earth vibrations) although most earthquakes rumble in a range below human hearing.

The unexplained sounds have been mentioned in Indian folklore and have been recorded by settlers as far back as 1635, Dr. Chiburis said.

"They haven't been noticed as often lately, perhaps because of the cultural background noises—cars, planes, dynamite blasts—drown them out," he said.

He declined to speculate on the origins of the noises, but said, "We definitely will be able to record what kind of noises the quakes emit, and their time and space distribution."

Four seismographs surrounding Moodus have been installed; one each in Bridgeport (at Sacred Heart University); in Chaplin; at Talcott Mountain Science Center, and in the Marine Sciences Institute building at Avery Point.

Data from the stations are fed by telephone lines into a film processor and read-out screen at Avery Point. Dr. Chiburis, or a graduate student, can follow the data from all the stations simultaneously.

Though the Moodus noises have captured the geophysicist's imagination, the network has a wider purpose.

Data will be analyzed to provide information on the crustal and upper mantle structure of Long Island Sound floor, New England and the Atlantic Ocean; the characteristics of noise, the the time and space distribution of the minor quakes, many of which are too small to be felt or heard.

It is the first installation to detect and record earthquakes in southeastern New England.

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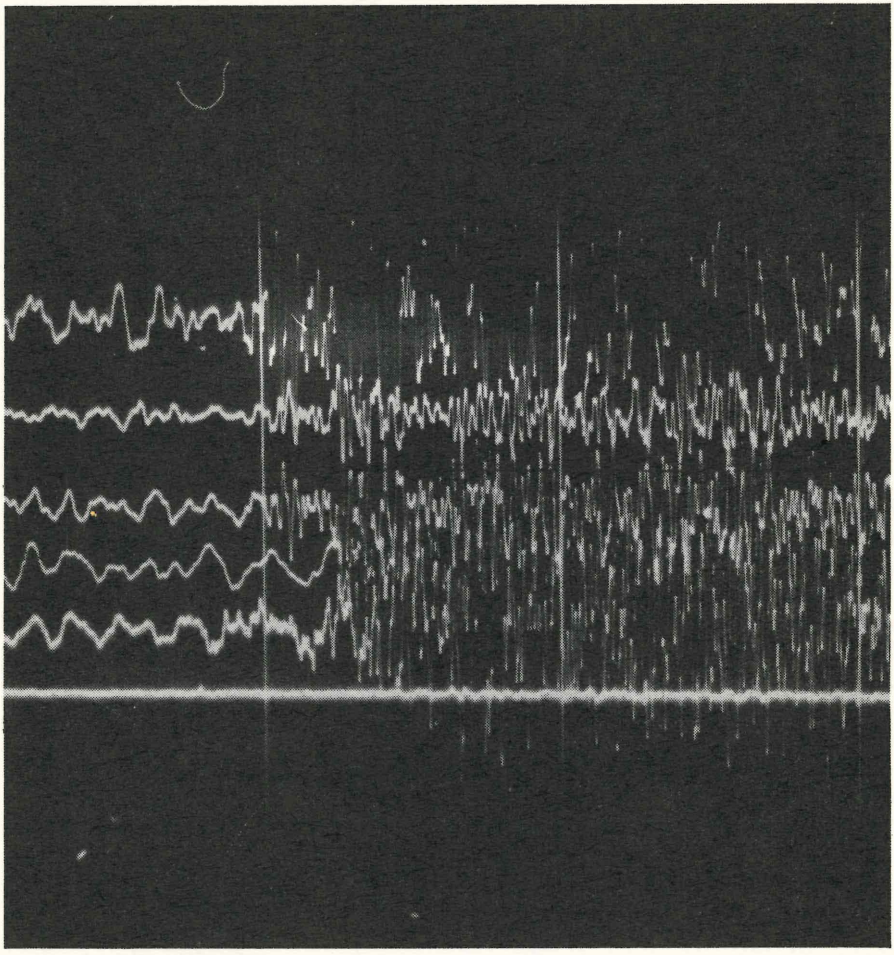
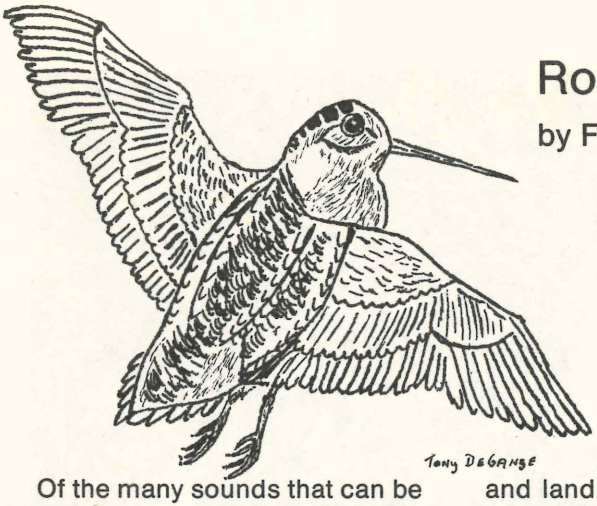
Our thanks to the *New London Day* for permission to reprint part of an article appearing February 25, 1972, by Mary Maynard, entitled "Seismic Ears Tuned On Moodus Noises".



Pennsylvania Earthquake, February 28, 1973

Trace 1 Avery Point - Vertical Motion
2 Avery Point - North-South Motion
3 Avery Point - East-West Motion
4 Chaplin - Vertical Motion
5 Talcott Mt. - Vertical Motion
6 Bridgeport - Vertical Motion (Imperative on this day)

The vertical lines are 10 second marks. The vertical ground motion has been magnified over 200,000 times on this record. This earthquake originated near the Philadelphia-Delaware border, and measured 3.5 on the Richter Scale. Photograph courtesy of Dr. Edward Chiburus, Assistant Director, Marine Sciences Institute, University of Connecticut at Avery Point. Time of day was 0823, Greenwich Mean Time.



Rocket of the Air

by Frank R. Haeni

Of the many sounds that can be heard in nature during the early spring months, the nasal 'peent' of a spiralling, rocketing, American Woodcock is one of my favorites.

April is the beginning of the mating season for these tiny birds of the woodlands. In the early evening at sunset and shortly thereafter, the performance begins. The male struts about on the ground with lowered wings and tail spread like a turkey cock, bowing and uttering 'peents'. He sometimes raises his bill vertically as high as possible, stretching his neck out, then pulling down his head until his eyes appear to be on his shoulders.

After this spectacular ground display, male woodcock take off for a most unusual aerial display. They climb high in the air, sometimes two or three hundred feet, before beginning a rapid descent to the ground. During this period of flight, two different sounds emanate from the bird. In addition to the vocal 'peent', air passing through the three outermost primaries makes a long 'beep' sound.

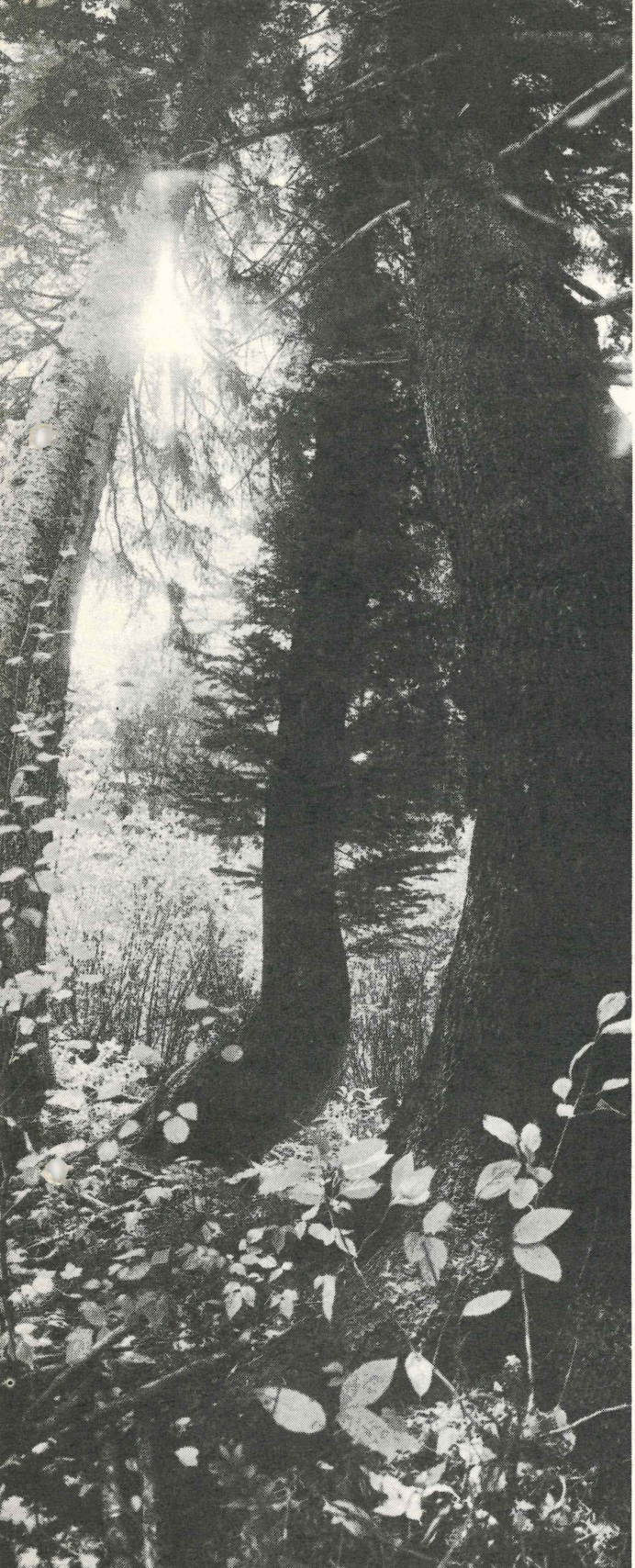
I have watched many woodcock rapidly spiral down toward apparent sure death, then at the last possible moment, break flight and land gently on the ground to gracefully strut away.

The woodcock has several common names including 'whistler', 'timber doodle' and 'woodsnipe'. They are larger than the common Jacksnipe, although the color patterns are very similar. The Jacksnipe is found probing for earthworms and insects in open wet meadows, whereas the woodcock is found in wet bottom woodlands.

When you are walking through a damp forest, you may be suddenly surprised by a burst of flying feathers beneath your feet. As your heart settles back down from your throat, you may see a ball of feathers twisting and turning, barely missing branches and leaves as a woodcock rockets away to find another feeding area. If you would like to hear and see this rocket of the air join us at the Thames Science Center on April 17 at 6:30 pm.

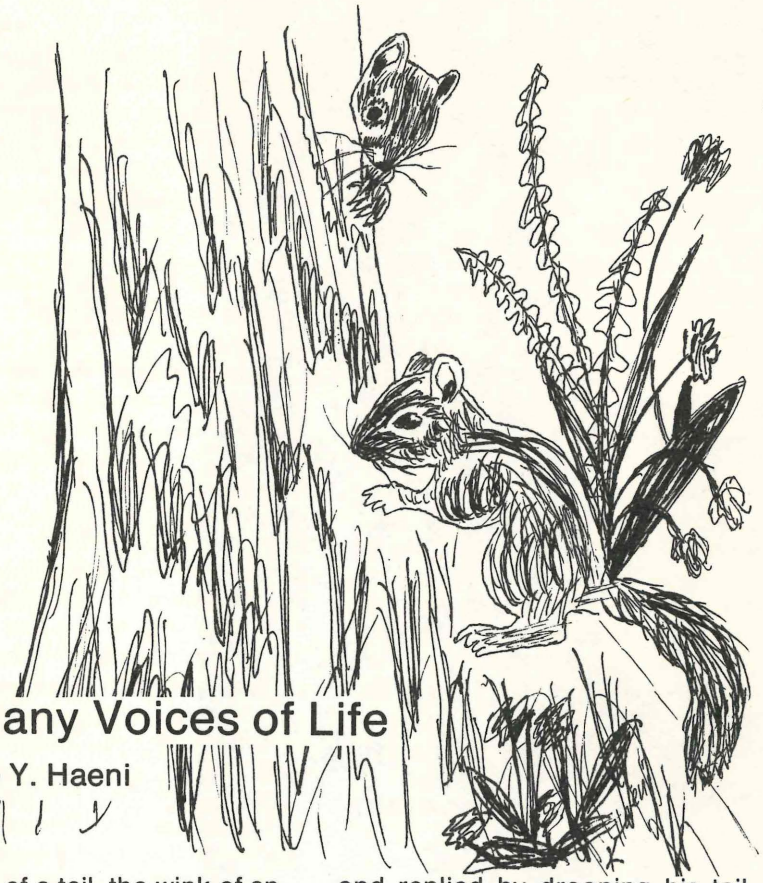
• • •

Frank R. Haeni, Chief Naturalist at the Thames Science Center, is an avid bird watcher and licensed bird bander. He has banded birds in Wisconsin, Saskatchewan, New York and Connecticut. In addition to his interest in birds, he enjoys photographing flowers and mushrooms.



Spring arrives with a blast of rushing winds and pounding rains, then mellows into the warm soft winds and rains awakening growth of buds and flowers. So many of the signs of spring seem to come as sounds. Spring peepers sing in newly-melted ponds, their small choruses competing with the louder croaks of their many amphibious cousins. Red-winged blackbirds proclaim territories from trees still bare of leaves. Soon they are joined by males of many other bird species, voices strong from their southern sojourns. The wild cries of geese and cranes winging northward carries the heart to wild places far away. All songs of spring - listen for your favorite!

Photograph by
Alan Becker



The Many Voices of Life

by Kathie Y. Haeni

The flick of a tail, the wink of an eye, a twist of the head, chattering and tree shaking are but a few of the different ways wildlife communicates.

Some years ago, an energetic scientist, Dr. Jan Taylor, was trying to learn why squirrels stripped bark from trees. However, he was gradually discerning something else, something startling that has been observed by almost everyone but seldom comprehended. The squirrels were not playing, when they scrambled down tree trunks, flicked their tails and chased each other gaily over the leaves, they were communicating with each other with tail flicks and chases.

It would go something like this: a male would approach another male and raise his tail. The second replied by drooping his tail. The first flicked his tail and squinted his eyes. The second widened his eyes. When squirrel number one's ears went up, the other's went down—and a chase was on, up and around the trees, noisily over the leafy ground. Such activities were messages that told all the squirrels that squirrel number one was dominant. He would be given preference at feeding areas and in mating.

As Taylor studied his squirrels around a complete annual cycle, he found that the meaning of the signals seemed to vary with the season. In autumn, chattering and chasing served to pass a different message: "Time to bury the nut crop". The communications attracted squirrels from all

over the forest, even from neighboring woodlands. It seemed, in effect, to be a period of measuring the squirrel population against the amount of available food.

Taylor is one of a worldwide group of scientists who since the turn of the century have been breaking through in the fascinating field of animal communications. Many creatures use signals to convey messages. And as in the chase of the gray squirrels many signals are by no means obvious.

Signals may also communicate emotions. In a study on grackles, Dr. Robert Ficken noticed that while he held a bird in his hand it flashed the nicotans (a mobile membrane inside the eyelids) across its bright yellow eyes. If the bird batted its eyes rhythmically, making them look like blinking lights, this indicated danger from which it could not flee. If it was confronted with another male, its eyes blinked rapidly and at random, showing conflict between the desires for escape and battle.

Many signals are used in defining an animals territory. Signals are not necessarily two-way; sometimes they are of value only to the sender. For instance, it has long been known that urine or scent marking by members of the dog family, both wild and domestic, is a social phenomenon that brings mates together and warns of the presence of strangers and rivals. Dogs familiarize the landscape for themselves through this scent signal. It helps them to "see" their way around a territory.

The signals of insects are also difficult to interpret, for many of them are sent through chemicals. For example, the female cecropia moth which, during its breeding cycle, emits a chemical call to males for one hour before dawn. When marked males were released farther and farther from a female the chemical carried on the wind could effectively attract over ranges up to three miles. The signal could travel not only far but quickly; for example, one male released three miles from a female found her in less than half an hour.

Ants, too, signal one another with chemicals. If you have wondered how a piece of food discovered by one ant suddenly becomes covered with its relatives, recent work with leaf cutting ants helps to make it clear. In the abdomen of this particular species of ant there is a chemical, the nature of which is not yet known. When a forager discovers a crumb of food, he returns to the colony, leaving behind him a trail of the mysterious chemical. Ants who come within range of it are excited and follow it back to the food. To ants these lines seem to say, "This way to the food.".

Today there are important practical applications of these signal studies. They have been used to avert disasters at many airports between flocks of birds and planes. A tape of the distress signal of the particular species of bird is played, thus frightening the flock away. With further studies in animal communication, we are able to control harmful insects biologically and not with chemicals.

Further studies will also show us that in the world of animals, "Every movement has a meaning all its own.".

• • •

Kathie Y. Haeni is an amateur animal behaviorist. She is an assistant at the Thames Science Center and is in charge of the Young Naturalist Program.

The Peace Sanctuary

by Richard H. Goodwin

The Peace Sanctuary was established in August 1967 as a perpetual trust by the will of the late Mrs. Mary L. Jobe Akeley, widow of Carl Akeley, the noted African explorer. The property, situated on the west bank of the Mystic River, immediately opposite the Mystic Seaport, and locally known as Great Hill, comprises some 40 acres of ledgy woodland, with about 2,000 frontage on the River. A seven-acre tract of swampy woodland given by Mrs. Akeley to The Nature Conservancy is contigious to the Sanctuary and effectively protects the western boundary from encroachments. A long winding driveway leads up to the Akeley residence near the top of the hill. Another small house is located between the River Road and the bank of the estuary.

The terms of the will provide that the Peace Sanctuary shall be administered by three Trustees, who shall lease the property to an agency that will maintain it as a natural area, "for the preservation and protection of undisturbed natural conditions . . . held for the public use for educational, scientific and cultural purposes and limited to the public interested in science and conservation." The present Trustees are Mr. Russell L. Brenneman, Dr. Richard H. Goodwin and Dr. Robert Cushman Murphy.

Since September 1967, the property has been leased to the Thames Science Center, Inc. The Akeley house has served as the Director's residence, while the small house on the River has been occupied by one of the Center's naturalists. Both buildings have been extensively repaired and modernized.

During the fifth year of the Peace Sanctuary's existence a major capital improvement was the installation of a new water line along the River Road to service the two houses. The original pipe, designed only for summer use, had been laid too close to the surface to be safe from freezing.

The Peace Sanctuary offers the visitor a variety of habitats ranging from swampy thickets and deciduous woodland to high rocky outcrops overlooking the Mystic River and Seaport. It is traversed by a nature trail. The flora has been inventoried by Mr. John F. Gardner, a former Executive Director of the Center, and the report may be studied at the Center's library.

The Sanctuary is becoming increasingly popular as a place to walk and observe nature, particularly on week ends. The Thames Science Center conducts field trips and family nature jaunts through the area under the guidance of trained leaders, and holds a two week session of its Environmental Science Study Day Camp during the summer. Mr. Frank R. Haeni, the resident naturalist and a licensed bird bander, has been banding birds and scheduling bird banding demonstrations open to the public.

Mrs. Akeley left an endowment known as the Mary L. Jobe Akeley Trust to support the maintenance of the Sanctuary. A consolidated statement of the principal and interest accounts of this Trust for the three year period from January 1, 1970 thru December 31, 1972 is given below. Funds distributed to the Thames Science Center are used to reimburse the Center for custodial care of the Sanctuary and to maintain the property.

• • •

Dr. Richard Goodwin is Professor of Botany at Connecticut College and a Consultant to the Board of the Thames Science Center. His efforts in identifying and conserving natural areas have resulted in protected status for many of these irreplaceable lands.

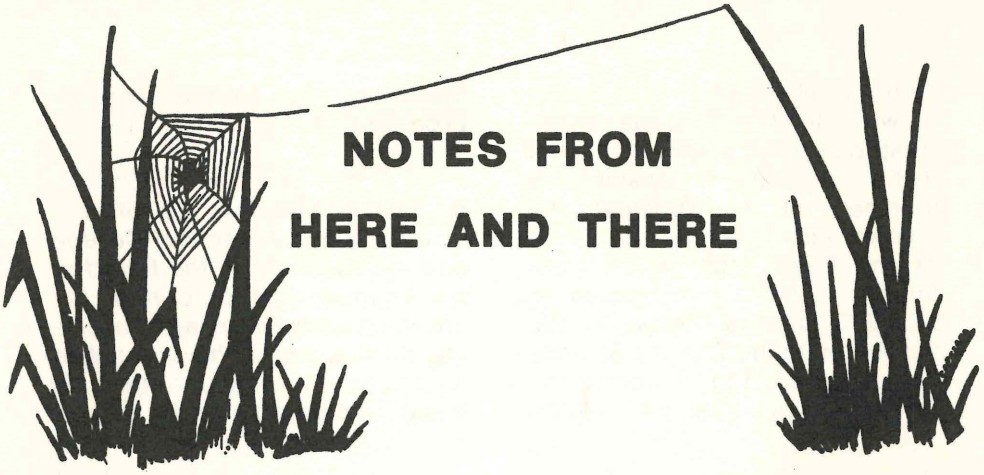
Mary L. Jobe Akeley Trust
Account for the period January 1, 1970, to December 31, 1972

PRINCIPAL ACCOUNT

Principal on hand January 1, 1970		$241,660.67
Principal received	$ 7,314.10	
Gain on sale of principal	2,827.40	
TOTAL RECEIPTS		10,141.50
		251,802.17
Loss on sale of principal	51,053.44	
Principal expenses	4.81	
Distribution to the Thames Science Center	1,888.40	
TOTAL DISBURSEMENTS		52,946.65
Principal on hand December 31, 1972		$198,855.52

INCOME ACCOUNT

Income on hand January 1, 1970		$ 1,801.42
Income from investments	$26,381.04	
Rent	151.00	
TOTAL RECEIPTS		26,532.04
		28,333.46
Legal expenses	4,617.86	
Insurance	1,052.00	
Investment Counsel	1,849.00	
Income taxes	1,135.75	
Trustees expenses	34.45	
Building repairs	786.01	
TOTAL EXPENSES	9,475.07	
Distribution to Thames Science Center	18,858.39	
TOTAL DISBURSEMENTS		28,333.46
Income on hand December 31, 1972		$ -0-



NOTES FROM HERE AND THERE

T.S.C. HIKING TRIP TO THE WHITE MOUNTAINS: The Thames Science Center will be sponsoring a hiking trip to the White Mountains of New Hampshire on May 18, 19, 20. We will be staying at the Appalachian Mountain Club Lodge at Pinkham Notch. Both days will be spent hiking the trains around the base of Mount Washington. The program is open to anyone over eighteen, including non-members. For further information call the Center at 442-0391.

SUMMER DAY CAMP: Dates for the Thames Science Center Environmental Summer Day Camps have been arranged as follows: June 25 to July 6, Peace Sanctuary Nature Preserve; July 9 to 20, Connecticut Arboretum; July 23 to August 3, Lyme; August 6 to 17, Waterford. There will be two age groups in each session. The Center is also planning summer programs for preschoolers. Further information will be mailed to all Science Center members.

ALPINE AND MARINE EXPEDITIONS FOR HIGH SCHOOL STUDENTS: The dates for these weekend programs have been set for June 15 to 17, Alpine Expedition, and June 23 and 24, Marine Expedition. Further information will be mailed to all Science Center members and to high schools.

MEMBERSHIP DRIVE: Do you know someone who might enjoy belonging to the Thames Science Center? We would be glad to send them information on the advantages of membership if you give us a call at 442-0391. Or better yet, bring them to the Center and introduce them to some of our activities yourself. We need your help in making our membership, and thus the programs we offer, grow.

SUMMER COURSE: An exciting new program of summer courses for adults and high school students will be offered this summer at the Thames Science Center. Topics will include Art and Nature, Field Ecology, Teaching Techniques in Environmental Education, Marine Biology, Entomology, for and Plants. Watch our Activity Calendar for further information.

OIL SPILLS: Between July 1 and December 15, 1972, more than 51,715 of the 86,125 gallons of oil and similar contaminants reported spilled found their way into Connecticut's streams, rivers and coastal waters. During this period, 92 separate oil spills were reported, an average of one every second day.

Field Notes February 1973

February was unseasonably warm, bringing out both buds and animal life. Dormant dogwood blossoms have begun to telescope, daffodils and crocuses to push up through the ground. The chipmunk which has been wintering under a large rock behind the Science Center has come out several times for food. Cardinals, Song Sparrows and Juncoes have been heard singing throughout the month.

New London, Waterford: Twelve GADWALL ducks were seen at Harkness Cove throughout the month. A large flock of CEDAR WAXWINGS were seen in New London February 2. An unusually high number of GREAT BLUE HERONS wintered in Southeastern Connecticut. Five were seen at Rocky Neck Park on Feb. 3. A RED-NECKED GREBE in winter plumage was seen in Waterford Feb. 4, as was a BROWN THRASHER on Feb. 7, 8, and 13; a WOOD DUCK on Feb. 21. Snowdrops in were found blooming in Waterford on Feb. 21. The rarely-seen SHORT-EARED OWL was observed on Feb. 26, and the first RED-WINGED BLACKBIRD on Feb. 27, both in Waterford.

Niantic: A YELLOW-SHAFTED FLICKER was observed feeding at a suet bag Feb. 14, the first RED-WINGED BLACKBIRD on Feb. 22, and two RING-NECKED DUCKS on Feb. 28.

Saybrook, Essex, the Lymes: Thirteen BLUEBIRDS were reported from this area during February, eleven in Essex and two in Otter Cove, Saybrook. Twelve MEADOWLARKS were seen on the shore in Old Lyme at the mouth of the Connecticut River. A BARRED OWL was observed in Old Lyme on Feb. 28 as was a FISH CROW in Saybrook.

Salem: RED-BELLIED WOODPECKERS seem to be moving into southeastern Connecticut, as another was seen in Salem Feb. 25. A CHIPMUNK was also observed Feb. 25.

Norwich: A large flock of forty HORNED LARKS were seen in an open field west of Norwich Feb. 18. A WINTER WREN was seen the same day.

Gales Ferry: Four RUFOUS-SIDED TOWHEES have been seen throughout the winter. a FOX SPARROW and a RED-BELLIED WOODPECKER were observed Feb. 10. Five RED-WINGED BLACKBIRDS arrived Feb. 17.

Mystic: The forty CANVASBACK DUCKS seen in early December can still be seen on the Mystic River. Fifteen AMERICAN COOTS were found feeding throughout the month along the Mystic River. The PILEATED WOODPECKER was seen again at the Peace Sanctuary on Feb. 21.

Rhode Island Shoreline: Birders on Feb. 25 made the following observations: a RAZORBILL at Galilee and a large flock of PINE GROSBEAKS in Narragansett. A small stream near Kingston along Route 1 produced the following birds: a flock of COMMON EIDERS, all three species of SCOTER, an ICELANDIC GULL and a flock of RUSTY BLACKBIRDS.

Contributors: Mrs. R. Austin, Grace Bissell, Mrs. B. Blanchette, F. R. Haeni, K. Y. Haeni, H. Kelsey, E. Kiernan, Mrs. J. Lombardino, E. L. Marsh Jr., Dr. R. Parker, H. Reinsch, Mrs. W. Valentine.

Gull Study

We need your help! Frank R. Haeni, Chief Naturalist at the Thames Science Center, is studying Herring Gulls at the Groton and Stonington landfill areas. The Gulls at Groton are being marked with blaze orange wing tags, and at Stonington with dark blue wing tags. They are placed on the left wing of each bird and are visible at distances of up to 100 yards. The orange tags have a ¼ inch black border with a black letter and number painted on it, e.g., A1, B1, C1. The purpose of the study is to determine the movement of these birds from the dumps to their roosting, resting and feeding areas along the Sound and the rest of the eastern seaboard. If you observe a wing tagged Gull, please record the tag color, letter and number, location relative to nearest road, town or island, and time of day. Please call the Center at 442-0391 or the Peace Sanctuary at 536-8850 to report your observations.

Seagull Saga

One of the most intriguing results of Mr. Haeni's seagull banding program is this letter concerning the recovery of a band from a Herring Gull banded August 1, 1972 at Sandy Point in Stonington.

"It was a pleasure to receive today the follow up certificate from your office concerning the banded seagull which I retrieved from the beach at Holmes Beach, Florida. Thank you.

And it was a most pleasant surprise to learn that the HERRING GULL originated near Noank, Conn. and that the work of banding was being carried out there from the Thames Science Center. I could scarcely believe that this bird, too young to fly when banded, could have flown more than a thousand miles south, as well as the countless miles in every other direction while seeking food, and all within a three month period. This opens new vistas of understanding of our wildfowl performance, and I will be happy to share this bit with my friends and family.

The reason for the added pleasure about New London, Conn. is that I spent a number of years in that vicinity, having been graduated from the USCG Academy (28 Jan 1927) and again having had duty there on ships, and still again as instructor at the new Academy location (1933-37) and having just come from there after having attended my Class of '27 Reunion. You can see what a flood of memories your little notification stirred up for me, and all because of a sea gull! In fact, my entire life as an adult has been spent in the domain of seagulls . . . and so continues."

Vernon E. Day, Captain, USCG (Ret.) Seattle, Washington.

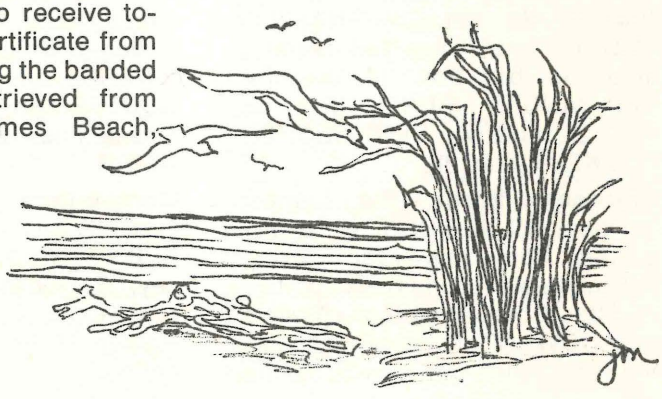
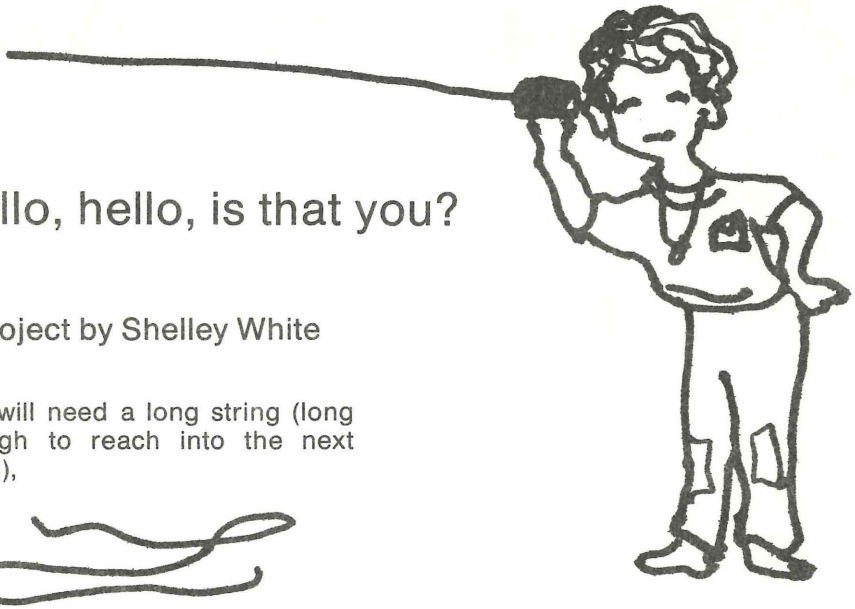


Illustration by Joy Miller



Hello, hello, is that you?

A project by Shelley White

You will need a long string (long enough to reach into the next room),

two paper cups,

a wax candle,

and a friend to talk to.

Poke a small hole in the bottom of each paper cup and pull the end of the string through the hole from the outside. Tie a knot in the end of the string inside the cup, so that it won't pull through the hole. Rub the string over the candle until it is covered with wax. Go into the next room, leaving your friend with one end of the "telephone". Pull the string tight, then speak softly into your cup. If your friend is holding his cup over his ear, he will hear your voice. The waxed string conducts the vibrations of your voices back and forth.

A Checklist of Sound Facts:

Sound is a form of energy that your ear picks up.

Sound waves are produced by vibrating bodies.

Your eardrum vibrates when sound waves hit it, it moves air and tiny bones inside your ear to carry the vibrations to nerves which carry the message to the brain.

Sound cannot travel through a vacuum. It needs some form of matter (solid, liquid, or gas) to carry it.

The speed of sound in air at freezing temperatures is approximately 1100 feet per second.

Sound travels faster through the ground or through water than it does through the air.

An echo is reflected sound.

Sonar uses reflections of sound waves in water to locate things under water.

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